Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Determining and comparing the effect of 4-aminopyridine versus placebo on the severity and frequency of freezing of gait (FOG) in the ON phase in patients with Parkinson’s disease

Protocol summary

Study aim

Determination and Comparison of the Effect of 4-Aminopyridine versus Placebo on the Severity and Frequency of Freezing of Gait (FOG) in the on Phase in Patients with Parkinson’s Disease Referred to Rasoul Akram Hospital, Tehran.

Design

a randomized, controlled clinical trial with parallel groups, single-blind (participants only), phase 2,conducted on 90 patients with Parkinson’s disease experiencing episodes of freezing of gait (FOG).Participants will be divided into two groups with 45patients.Randomization will be performed using the RAND function in Microsoft Excel.

Settings and conduct

Patient referral to Movement Disorders Clinic / clinical examination and completion of questionnaires and informed consent / medication prescription using a single-blind design, meaning that only the participants are unaware of their allocation to either the 4-aminopyridine group or the placebo group.

Participants/Inclusion and exclusion criteria

Inclusion Criteria:1.Diagnosis of idiopathic Parkinson’s disease confirmed by a Parkinson’s disease fellowship.2.History of experiencing episodes of freezing of gait, with a baseline FOG score ≥ 10.3.Age between 40 and 80 years.4.Providing written informed consent to participate in the study. Exclusion Criteria:1.History of hypersensitivity to 4-aminopyridine.2.History of seizures for any reason.3.Occurrence of severe adverse effects requiring discontinuation of the medication.

Intervention groups

A total of 45 patients will receive 4-aminopyridine 10 mg every 12 hours for a duration of 6 weeks, after which the questionnaires will be completed again. Another 45 patients will receive placebo, and the questionnaires will be filled out for them before and after 6 weeks of placebo administration.

Main outcome variables

Severity of freezing of gait (FOG score); Frequency of freezing of gait episodes; Change in FOG score after 6 weeks of treatment;

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20251122068081N2**
Registration date: **2025-12-20, 1404/09/29**
Registration timing: **prospective**

Last update: **2025-12-20, 1404/09/29**
Update count: **0**

Registration date

2025-12-20, 1404/09/29

Registrant information

Name

neda sheikhinia

Name of organization / entity

Country

Iran (Islamic Republic of)

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+98 31 3663 0667

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-12-22, 1404/10/01

Expected recruitment end date

2026-05-22, 1405/03/01

Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Determining and comparing the effect of 4-aminopyridine versus placebo on the severity and frequency of freezing of gait (FOG) in the ON phase in patients with Parkinson’s disease

Public title
Evaluation of the effect of 4-aminopyridine on freezing of gait in patients with Parkinson’s disease
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Diagnosis of idiopathic Parkinson’s disease confirmed by a Parkinson’s disease fellowship-trained neurologist History of experiencing episodes of freezing of gait, with a baseline FOG score ≥ 10 Age between 40 and 80 years Stable treatment regimen with no medication changes during the past month Receiving a stable dose of levodopa for the past 4 weeks Providing written informed consent to participate in the study.
Exclusion criteria:
History of hypersensitivity to 4-aminopyridine. History of seizures for any reason. Presence of severe cognitive impairment (MMSE < 24). Presence of another comorbidity that can impair gait, such as stroke or osteoarthritis Occurrence of severe adverse effects requiring discontinuation of the medication.
Age
From **40 years** old to **80 years** old
Gender
Both

Phase
2-3
Groups that have been masked

- Participant

Sample size
Target sample size: **90**
Randomization (investigator's opinion)
Randomized
Randomization description
placebo group using block randomization with variable block sizes of 4 and 6 to ensure balanced allocation. Individual randomization will be applied, and stratified randomization based on baseline FOG severity (FOG score 10–20 vs. >20) will be used to minimize imbalance between groups. The randomization sequence will be generated by an independent statistician using IBM SPSS. Allocation assignments will be placed in sealed, opaque, sequentially numbered envelopes, which will be opened by the study coordinator only after enrollment and consent. The medication and placebo will be prepared in identical packaging so that only the participant remains blinded to group allocation. Investigators and outcome assessors will be aware of the assigned intervention; therefore, the study will follow a single-blind (participant-blind)
Blinding (investigator's opinion)
Single blinded
Blinding description
This study is designed as a single-blind (Single-Blind) trial, meaning that only the participants are unaware of their assignment to either the 4-aminopyridine or placebo group .Participants: Blinded; the study drug and placebo are provided in identical packaging to prevent any discernible differences .Principal investigator and treating physicians: Not blinded, due to the need for monitoring potential drug-related adverse effects. Nurses, physiotherapists, and pharmacist: Not blinded; they are responsible for administering the study medication or patient care, but the allocation information is not disclosed to the participants. Outcome assessors and data collectors: Not blinded, but they follow standardized protocols to minimize bias. Data Safety and Monitoring Committee (DSMC): Not blinded, as they are responsible for reviewing patient safety. Data analysts and manuscript writers: Analysts remain blinded until the completion of the analysis, with groups coded as A and B.
Placebo
Used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of IRAN University of Medical Sciences
Street address
Niayesh St, Satarkhan St, Tehran, Iran
City
Tehran
Province
Tehran
Postal code
1449614535
Approval date
2025-08-12, 1404/05/21
Ethics committee reference number
IR.IUMS.FMD.REC.1404.249

Health conditions studied

1

Description of health condition studied
Parkinson's disease

ICD-10 code
G20
ICD-10 code description
Parkinson's disease

Primary outcomes

1

Description
Severity of freezing of gait (FOG score) as measured by the FOG Questionnaire.(this variable reflects the intensity of FOG episodes and will be used to assess the effect of 4-aminopyridine compared to placebo)
Timepoint
questionnaire completed before and after the 6-week treatment.
Method of measurement
freezing of gait (FOG)Questionnaire

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: 4-Aminopyridine 10 mg (Dalfyra®, Arvand Pharmed) is prescribed at a dose of one tablet every 12 hours for 6 weeks. Each patient is provided with 84 tablets of Dalfyra® 10 mg to be taken over a period of 6 weeks, at a dosage of two tablets per day, administered at 12-hour intervals.
Category
Treatment - Drugs

2

Description
Control group :Placebo(vit b1300) taken Q12 h for 6 weeks. Each patient is provided with 84 tablets of Placebo over a period of 6 weeks, at a dosage of two tablets per day, administered at 12-hour intervals.
Category
Placebo

Recruitment centers

1

Recruitment center
Name of recruitment center
Rasoul Akram Hospital, Tehran – Movement Disorders Clinic
Full name of responsible person
Fahimeh mohaghegh
Street address
Hazrat Rasoul Akram Hospital, Niayesh Street, Sattarkhan Street, Tehran, Iran
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Sponsors / Funding sources

1

Sponsor
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Iran University of Medical Sciences
Proportion provided by this source
100
Public or private sector
Public
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact
Name of organization / entity
Iran University of Medical Sciences
Full name of responsible person
Fahimeh mohaghegh
Position
Consultant
Latest degree
Subspecialist

Other areas of specialty/work
Neurology
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Undecided - It is not yet known if there will be a plan to make this available
Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available
Informed Consent Form
No - There is not a plan to make this available
Clinical Study Report
Yes - There is a plan to make this available
Analytic Code
Yes - There is a plan to make this available
Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available
Title and more details about the data/document
Information related to the primary outcome can be shared
When the data will become available and for how long
Access period starts 6 months after the publication of results
To whom data/document is available
Researchers affiliated with academic and scientific institutions
Under which criteria data/document could be used
Use of data for completing clinical studies
From where data/document is obtainable
You may request an appointment by visiting the Movement Disorders Clinic at Rasoul Akram Hospital or by emailing: fahmoh2013@gmail.com
What processes are involved for a request to access data/document
Upon review of the researcher’s request and submission of sufficient documentation about their study and the rationale for using the data, access may be granted.
Comments